NOTES.

The Oceanographical Museum at Monaco was inaugurated last week by the Prince of Monaco in the presence of a gathering of more than two hundred representatives of Governments, of scientific institutions, and of oceanographical research. Among many others present were:—M. Loubet, ex-President of the French Republic; M. Pichon, French Minister of Foreign Affairs; Admirals of the Fleet von Koester from Germany and Grenet from Italy; Vice-Admiral de Jonquières, commanding the French Mediterranean Squadron; and distinguished representatives of the Governments of Spain and Portugal. The Institute of France sent a large body of members representing the Academies of Sciences and of Fine Arts. The Academy of the Lincei at Rome, the Academies of Sciences at Berlin, Vienna, and St. Petersburg, the Royal Societies of London and Edinburgh, the Geographical Societies of Paris, Berlin, Vienna, and St. Petersburg, the Challenger Society, and many other societies and institutions were amongst the societies sending delegates. The British Government was not represented officially, owing to some blunder, but Mr. W. E. Archer, of the Board of Agriculture and Fisheries, Mr. J. Y. Buchanan, F.R.S., Dr. G. H. Fowler, Prof. W. A. Herdman, F.R.S., Dr. J. Scott Keltie, and Dr. H. R. Mill represented British marine studies. Among the leading men connected with oceanography, marine biology, and kindred sciences in other countries there were Mr. Bendall, of Bordeaux; Prof. Drygalski, of Munich; Prof. Forel, of Lausanne; Senator Grassi, of Rome; Prof. Haeckel, of Jena; Dr. P. P. C. Hoek, of Haarlem; Prof. Hensen, of Kiel; Prof. Hergesell, of Strassburg; Dr. Knipovitch, of St. Petersburg; Prof. Krümmel, of Kiel; M. de Margerie, of Paris; Prof. Otto Nordenskjöld, of Gothenburg; Prof. Penck, of Berlin; Prof. Perrier, of Paris; Prof. Pettersson, of Stockholm; Dr. Schmidt, of Copenhagen; Dr. Schott, of Hamburg; Prof. Supan, of Breslau; Prof. Thoulet, of Nancy; Prof. Max Weber, of Amsterdam; and Dr. Richard, director of the new museum, with Profs. Berget, Joubin, and Portier, of the Oceanographical Institute in Paris. The museum was inaugurated by the Prince of Monaco at a grand function on Tuesday, March 29; on the following day there was a banquet to three hundred guests, and the evenings were occupied by a special performance at the famous Opera House in Monte Carlo, a display of fireworks of extraordinary brilliance in the harbour, and finally by a magnificent State reception in the gorgeous apartments of the ancient palace of the Grimaldis. Meetings of four commissions, on the Atlantic, on the Mediterranean, on the perfecting of the Oceanographical Institute, and on the bathymetrical chart of the world, were held under the presidency of the Prince, and a summary of the proceedings will appear in another issue of Nature. The Prince conferred the Order of St. Charles in four classes on a number of persons, amongst whom may be mentioned as receiving that of the second class, or commander, Mr. J. Y. Buchanan, Senator Grassi, Prof. Penck, and Dr. Richard. The princely hospitality displayed on the occasions extended to the provision of free hotel accommodation for all the visitors invited to the *fêtes*, while the representatives of States were entertained at the Palace as personal guests of the Prince.

Sir William Ramsay, K.C.B., F.R.S., has been nominated president of the British Association for the meeting to be held at Portsmouth next year.

Sir Harry Johnston, G.C.M.G., has been elected a corresponding member of the Italian Geographical Society, in recognition of his work in Africa.

We regret to see the announcement of the death, at eighty years of age, of Prof. E. Pflüger, professor of physiology at the University of Bonn, and director of the Physiological Institute there.

The council of the Institute of Metals has decided to initiate what is hoped will be an annual series of May lectures. The first of these will be given in London on Tuesday, May 24, when Prof. W. Gowland, F.R.S., will deliver a lecture on "The Art of Working Metals in Japan."

A report from Berlin states that Prof. Abegg, of the University of Breslau, was killed as the result of a balloon accident on April 3. Prof. Abegg was president of the Silesian Aëronautic Society, and a prominent figure in the German aëronautic world.

We learn from the *Chemist and Druggist* that M. Henry Giffard, who died at Paris in 1882, made the State his residuary legatee. By a recent decree the Minister of Public Instruction placed a sum of 4000*l*., being part of the legacy, at the disposal of the University of Paris for the foundation of an Institute of Radio-activity.

At to-morrow's meeting of the Royal Astronomical Society, Prof. P. Lowell is expected to be present, and will speak upon his work. Major-General H. P. Babbage will exhibit and describe a calculating machine which he has recently completed, corresponding to the portion of the analytical engine which his father, the late Charles Babbage, named "The Mill."

A Reuter telegram from Berlin states that an expedition will leave Bremerhaven on July 1 on board the North German-Lloyd steamer *Mainz* for Spitsbergen in order to investigate the possibilities of an airship flight to the North Pole, which is planned for the summer of 1912. The party will include Prince Henry of Prussia, Count Zeppelin, and Profs. Hergesell and Drygalski, and will number altogether twenty-four members.

The valuable collection of shells formed by the late Mr. Thomas Gray, a well-known Glasgow conchologist, who died recently at the advanced age of eighty-nine, has been left by him to Kelvingrove Museum, Glasgow. More than 7000 species of shells are represented in the collection, including both British and foreign, land, fresh-water, and marine forms. It is said to be the finest collection of its kind in Scotland, and its possession places the Kelvingrove Museum well abreast of the leading museums in this country.

An Industrial and Agricultural Exhibition will be held at Odessa from May 15 to October 1 of this year. During the exhibition there will be lectures on technical and scientific subjects, and arrangements are being made for some congresses. The cooperation of scientific men is invited by the committee of the exhibition (Odessa, Novoselskaja 4, Technische Gesellschaft).

The Civil Service Commissioners announce that, in addition to the open competitive examination for situations as cartographer in the Hydrographic Department of the Admiralty, which is to be held in July next, another open competitive examination for similar situations will be held in December. Forms of application for admission to the December examination will be ready for issue about the middle of July, and will then be obtainable on request, by letter, addressed to the Secretary of the Civil Service Commission, London, W.

Mr. F. G. Ogilvie, C.B., has been appointed by the President of the Board of Education to a new post of Secretary of the Board for the Science Museum, Geological Museum and Geological Survey. Mr. E. K. Chambers has been appointed to succeed him as principal assistant secretary of the technological branch of the Board. Dr. H. F. Heath, director of special inquiries and reports, has been appointed to the post of principal assistant secretary of the universities branch of the Board in combination with his present post.

Mr. Walter Runciman, President of the Board of Education, has appointed a departmental committee to consider and report upon various questions in regard to the present condition and the future development of the valuable collections comprised in the Board's Science Museum at South Kensington and Geological Museum in Jermyn Street. In particular, the committee is asked to advise him (*a*) as to the precise educational and other purposes which the collections can best serve in the national interests; (*b*) as to the lines on which the collections should be arranged and developed, and possibly modified, so as more effectively to fulfil these purposes; and (*c*) as to the special characteristics which should be possessed by the new buildings which it is hoped will be erected shortly on the South Kensington site to house these collections, so as to enable the latter to be classified and exhibited in the manner most fitted to accomplish the purposes they are intended to fulfil. The committee is as follows:—Sir Hugh Bell, Bart. (chairman), Dr. J. J. Dobbie, F.R.S., Sir Archibald Geikie, K.C.B., P.R.S., Dr. R. T. Glazebrook, F.R.S., Mr. Andrew Laing, Sir Schomberg McDonnell, K.C.B., Sir William Ramsay, K.C.B., F.R.S., Prof. W. Ripper, Sir W. H. White, K.C.B., F.R.S., with Mr. F. G. Ogilvie, C.B., as secretary.

Reuter messages from Catania record that the eruption of Mount Etna increased in violence up to the end of March, when a stream of lava was moving at a speed of nearly forty yards an hour in the direction of Cisterna Regina, near Borrello. On April 4, however, the activity had considerably lessened. The streams of lava had diminished in volume, and changed their direction. They were then flowing towards Monte Rinazzi and Monte Faggi, submerging the lava remaining from previous eruptions. There was a pronounced recrudescence of the eruption early on April 5. The lava stream flowing towards Cisterna Regina in particular increased its rate of progress to 10 metres an hour, and reached a spot only 250 metres distant from the Nicolosi Borello road, destroying the cultivated land on its course.

The summary of the weather for the first three months of the present year, just issued by the Meteorological Office, shows that the mean temperature was above the average over the entire kingdom. The rainfall was below the average in the north of Scotland, and in agreement with the average in the north-east of England, whilst in all other districts the fall was in excess of the average; the greatest excess was 2·77 inches, in the north of Ireland. The largest total measurement was 14·61 inches, in the north of Scotland, and the least 5·21 inches, in the east of England. The number of rainy days were everywhere in excess of the average. There was an excess of sunshine over the whole of Great Britain, amounting to 84 hours in the Midland counties, 76 hours in the north-west of England, and 70 hours in the south-west of England. The largest aggregate duration of sunshine for the three months was 362 hours, in the Channel Islands, and the least 212 hours, in the north of Ireland. There was an excess of sunshine in twelve out of thirteen weeks in the Midland counties, and in eleven out of thirteen weeks in the south-west of England.

Mr. R. M. Barrington, writing from Fassaroe, Bray, Co. Wicklow, says:—"On March 21, at 9 a.m., the reading of the wet-bulb mercurial thermometer 4 feet from the ground in a Stevenson's screen was 1° F. *higher* than the dry-bulb mercurial thermometer 3 inches distant in the same screen, the readings being 46° and 45° respectively. Assuming the instruments are accurate and in working order, can such a thing occur?" He adds that at the moment of observation the temperature was falling rapidly. A distinguished meteorologist informs us that cases of the wet bulb above the dry are by no means rare, but the difference is rarely so much as 1°. They are generally dealt with in practice by attributing the differences to instrumental errors or temporary meteorological circumstances (such as the rapid fall of temperature noted by Mr. Barrington), which bring out an imperfection in the conventional methods of thermometry.

The tragedy which deprived M. Charlois of his life on Easter Day deprived French astronomy of a brilliant worker and the Nice Observatory of an enthusiastic observer. M. Charlois devoted himself chiefly to the minor planets, and was only second to Dr. Max Wolf in the number of these bodies which he discovered. At the foundation of the Nice Observatory by M. Bischoffsheim in 1881, Charlois was appointed secretary to M. Perrotin, the first director, and in 1887 was given charge of the minor planet work. Observing with the 38-cm. refractor he discovered, up to December, 1902, 104 which previously had escaped detection. Twenty-seven of these were found visually, between 1888 and 1892; but M. Charlois was the first to adopt Dr. Wolf's photographic method, and thereby added seventy-seven more asteroids to the rapidly growing family. These he discussed in vol. viii. of the Annals of Nice Observatory, but he also published a number of orbits, observations, &c., in the *Bulletin astronomique*, the *Astronomische Nachrichten*, &c.; for this work he was awarded the Janssen medal of the Astronomical Society of France in 1899. Minor planets did not, however, absorb all M. Charlois's energies, for he observed many comets, measured double stars, made a great number of latitude observations, and accompanied M. Thollon to Spain for the transit of Venus in 1882. At the transit of Mercury in 1907, he made observations which afforded corrections to the ephemeris, and he also rendered valuable assistance to the International Astrographic Conference in their work on Eros; it is interesting to note that he secured a plate showing the trail of this remarkable asteroid on the same evening that it was discovered by De Witt, but did not recognise it until after the announcement of the discovery by the Berlin observer.

Little has hitherto been known of the language of the Yana tribe of Indians, who occupy part of Shasta County, in the northern region of California. This want has now been supplied by Messrs. E. Sapir and R. B. Dixon, who have contributed to the ninth volume of the Publications of the University of California a series of legends recorded from the lips of the two last survivors of those learned in the tribal traditions. One of these tales is a remarkable variant of the Prometheus type of legend, describing how Fox, Sandpiper, and Coyote stole the fire, how the world was burned, and how the thieves escaped in a basket which Spider hauled up to heaven by his thread. Another and less complete version of the tale has been published by Mr.

J. Curtin in his "Creation Myths of Primitive America." The present collection of tales, recorded in two dialects, will preserve for the use of philologists a language which is fated before long to disappear.

THE group Mesozoa is, as is well known, a kind of zoological waste-paper basket into which various obscure forms of extremely lowly organisation have been cast from time to time. Many of these forms are of great interest as indicating possible transitions from the unicellular to the multicellular condition. The genus Haplozoon has been added to this miscellaneous assemblage by Dr. Dogiel, who describes some new species thereof in the *Zeitschrift für wissenschaftliche Zoologie* (Band xciv., Heft 3). These remarkable parasites, which live in the alimentary canal of various polychæte worms, occur in the form of single or multiple chains of cells, the first cell of the series being provided with one or more stylets. Dr. Dogiel has proposed the group-name Catenata for these organisms, which he considers to be derived from the unicellular Peridinea, and to exhibit protophyte rather than protozoon affinities.

IN a paper on the stability of the physiological properties of coliform organisms (*Centralbl. f. Bakteriologie*, Abt. ii., Bd. 26, 1910, S. 161) Mr. Cecil Revis suggests that the capacity of a micro-organism to ferment various sugars, polyhydric alcohols, and polysaccharides depends on the presence of certain atomic groups in the substances. Thus glucose, mannose, galactose, lævulose, and lactose all contain the group —CHOH—O—CH=, and are fermented by *Bacillus coli*, while sucrose does not, and is not fermented by many strains of *B. coli*. Attempts were made to change the fermentive properties of various strains of *B. coli* and other organisms by prolonged sojourn in soils contaminated with fæces, &c., and in a non-albuminous medium. After some months changes were frequently noticed in the organisms isolated. Thus with one typical *B. coli* which fermented lactose, dulcitol and glucose well in twenty-four hours, after seven months in soil contaminated with human fæces an organism having the original properties was isolated, and, in addition, three other forms, A, B, and C, were isolated, characterised by differences in the appearance of their colonies. Of these, A and C gave the original reactions unchanged, but B fermented none of the test substances. Other instances of similar changes are given. In control cultures kept on gelatin, in general no change at all occurred.

THE Municipality of Hanover, according to a paper by Mr. E. Howarth on some German museums in the February number of the *Museums Journal*, deserves the gratitude of antiquarians for having restored and fitted up as a museum Leibnitz House, the picturesque fifteenth-century residence of a German merchant. It contains four storeys, all stocked with objects of industrial art and industry, arranged from an æsthetic rather than a systematic point of view.

IN the March number of the *Irish Naturalist* Mr. R. J. Ussher gives his experiences of cavern-exploration in Ireland, in which he has taken so large a share. Most important of all is the mammoth-cave near Doneraile, Cork, which was worked from 1904 onwards, and is older than any other except Shandon. This cavern takes its name from the number of mammoth-remains, but is also characterised by the abundance of reindeer and the absence of red deer, wild boar, and badger.

ACCORDING to the report of the Lancashire and Western Sea-fisheries (to which allusion was made in a recent issue), there is reason to believe that black-headed gulls are injurious to cockle-beds. In the Floodborough district these birds have been ascertained to feed almost exclusively on young cockles, which they pick out of the sand. It is accordingly recommended that these birds should be excluded from the Wild Birds Protection Act, and their eggs destroyed in the breeding-season.

IN the course of an interesting account of his recent journey in north-western Arabia, published in the March number of the *Geographical Journal*, Mr. Douglas Carruthers claims to be the first European who has sighted the Arabian ostrich since Palgrave's time. Three were seen in the Wadi Hidrij, about 120 miles south-east of the Dead Sea, which is probably the northern limit of these birds, the range of which includes all the interior of Arabia. It is suggested that the Arabian ostrich is inseparable from the typical *Struthio camelus* of North Africa, but since the Arabian oryx and baboon are distinct from their African relatives, this is by no means certain, and can only be determined by the acquisition of actual specimens. Mr. Carruthers states that the interior of Arabia is undergoing secular desiccation, so that many of the Beduin find it increasingly difficult to maintain themselves.

THE question of the proper pose of the limbs of Diplodocus, which was opened some months ago by Dr. Hay, has been taken up again by Mr. G. Tornier in a paper published in the *Sitzber. Ges. naturfor. Berlin*, 1909, p. 193. In this paper a restoration is given of the skeleton, in which the shoulder-girdle is pushed low down and the humerus and femur are extended almost horizontally, so as to bring the belly within a very short distance of the ground, while the head and neck are raised aloft in swan-like fashion, the feet being mounted in wholly plantigrade style. The general appearance of the skeleton is somewhat grotesque. On p. 507 of the serial cited Mr. Tornier replies to those who have criticised his restoration of Diplodocus. Prof. O. Abel (*Verh. k.k. zool. bot. Ges., Wien*, 1909, p. 117) has likewise entered the lists, and urges that all the sauropod dinosaurs were "elephant-footed," that is to say, in place of being plantigrade, their feet were of the semi-digitigrade type characteristic of the Proboscidea, with posterior foot-pads. This Mr. Tornier refuses to admit in a paper published in the *Sitzber. Ges. naturfor., Berlin*, 1909, p. 537, where the completely plantigrade character of the feet of these reptiles is re-asserted.

MR. B. H. RANSOM, assistant-custodian of the helminthological collections, the National Museum of Washington, has written a valuable work on the tænioid cestodes of North American birds (Bulletin No. 69, U.S. National Museum, Washington, 1909). Ten years ago, when studying under Prof. H. B. Ward, at that time of Nebraska, he began an investigation into the cestodes of North American birds, and the present volume, of 140 pages, is the first outcome of this research. The volume contains detailed descriptions of five new species, and there are numerous adequate figures. It also contains keys to the genera of the superfamily Tænioidea, diagrams of families, subfamilies, and genera, and lists of the species occurring in North American birds are added. The recent monograph of Dr. O. Fuhrmann, the well-known authority on bird tape-worms, has been of great service to the author. Mr. Ransom's paper ends, as is usual with American publications, with a very full bibliography and an accurate and full index, for which we cannot be too grateful to the author.

DR. K. M. LEVANDER has published an important work on the food and parasites of fishes in the Gulf of Finland ("Beobachtungen über die Nahrung und die Parasiten der Fische des Finnischen Meerbusens," *Finnländische Hydro-*

graphisch-Biologische Untersuchungen, No. 5, Helsingfors, 1909), supplementary to the earlier works of Dr. G. Schneider. A work of this kind requires very careful analysis and abstracting, and if we are to learn which of the species forming the food has supplied the parasites in question, we must carry the research rather farther. We have in this work very long lists of species of insects and their larvæ, of Crustacea and their larvæ, of molluscs, occasional worms, and other fish all eaten as food. We have also considerable lists of cestodes, trematodes, nematodes, Acanthocephala, &c., but the paper does not, in our opinion, sufficiently attempt to indicate which food-animal brought into the body of the fish the several parasites enumerated. Nevertheless, the work forms a foundation for further investigation, and one which will afford material for a greatly developing subject.

The spread of interest in ecological botany is naturally creating a demand for photographs and lantern-slides of typical areas of vegetation. Mr. W. B. Crump, of Halifax, who has taken part in some of the British botanical surveys, has accumulated a series of photographic negatives depicting many of the recognised plant associations, from which he offers permanent photographic prints (15 by 12 inches or 12 by 10 inches) made by the ozobrome process or lantern-slides. The more detailed studies are only offered as lantern-slides. Descriptive notes are supplied. The photograph reproduced represents a Cheshire mere, near the margin of which clumps of *Molinia coerulea* are growing, while heather is seen in the immediate foreground, and a plot of *Juncus supinus* occurs on the further side.

Calluna Heath: a Cheshire Mere. (*a*) *Molinia coerulea*; (*b*) *Juncus supinus.*

The first issue of the *Kew Bulletin* (1910) opens with a descriptive list, communicated by Mr. G. Massee, of new exotic fungi. An agaric, *Marasmius scandens*, so called from the way it extends its cord-like mycelium and produces the resupinate pilei at intervals, is reported to cause considerable damage to cocoa plants on the Gold Coast. Two suspected insect parasites are described, viz. *Sclerodèrris gigaspora*, taken on orange leaves with scale insects, and *Septocylindrium suspectum*, found on the bodies of dead "frog-hoppers." A new parasite on the roots and branches of *Hevea brasiliensis*, received almost simultaneously from Singapore and the Gold Coast, receives the name of *Diplodia rapax* (Melanconiaceæ). Mr. A. D. Cotton contributes an article on the growth of the alga *Ulva latissima*, which, in contrast to most algæ, flourishes in stagnant and sewage-polluted water.

Messrs. J. B. Baillière et Fils are issuing a small monthly booklet, *Le Mois agricole*, containing notes likely to be of value to the agriculturist, the vine-grower, and the gardener. There are also detailed notices of the recent publications of the firm.

The necessity for continued work on the sugar-cane is thoroughly recognised in the West Indies, and bulletins are regularly issued setting forth the results obtained up to the time of publication. We have recently received Pamphlet No. 63 of the Imperial Department of Agriculture for the West Indies, giving a summary of the results obtained in Antigua and St. Kitts during 1908–9.

The Agricultural and Horticultural Association issue an annual booklet entitled "One and All Gardening," containing a number of short articles of interest to gardeners and others. Among the most attractive is one by the Hon. H. A. Stanhope, in which the legends attached to certain plants are pleasantly re-told. The outdoor school lessons given at the Frensham Schools in Surrey are described, while Miss Sipe writes on school gardening in the United States. The booklet is well illustrated.

From the Edinburgh and East of Scotland College of Agriculture we have received a bulletin, by Dr. Lauder and Mr. Fagan, giving the milk records for the dairy herd at the Rosslynlee Asylum. An attempt was made to trace the relation between ventilation of the cow-sheds and the yield of milk, but the results are not very decisive. So far as they go, they indicate that the animals in the well-ventilated, and therefore colder shed, gave at least as much milk as those in the warmer, ill-ventilated sheds, and remained in a healthier condition.

A report has recently been issued by Mr. E. Brown on the poultry industry of 1909, from which it appears that the decline in the import of foreign eggs, which has been going on since 1903, still continues, not so much as a result of increased home production as of increased requirements by Germany, now the largest importer of poultry produce in the world; but although the amount of our imports has declined, the values have risen, and the factors at present controlling prices seem to be permanent. It is urged that farmers and small holders have now an opportunity in connection with poultry raising such as they never have had before.

In vol. lii., part iv., of Smithsonian Miscellaneous Collections, Mr. G. P. Merrill describes and figures a stony meteorite which has recently come into the possession of the U.S. National Museum at Washington. The interest of this specimen, which is of rudely quadrangular form, with a maximum diameter of about 2½ inches, consists in the fact that it was actually seen to fall by the late Mr. B. F. Wilson on October 15, 1888, in McDuffie County, Georgia. It fell within a distance of about thirty yards of the observer, who was engaged at the time in picking cotton, and was at first under the impression that someone had thrown a stone at him. The meteorite buried itself to a depth of some 6 or 8 inches in the soil.

AN application of the hydrodynamical theory of seiches to the Lake of Garda (Benaco) forms the subject of an essay by Dr. Francesco Vercelli (*Memorie del R. Istituto Lombardo*, vols. xxi.–xxii. [3], 1). The form of the lake is very irregular, the lower end being divided into two branches by a rock forming the peninsula of Sirmione, and projecting for a considerable distance further under water. The author has calculated the positions of the various nodes, and has applied Chrystal's so-called "quartic approximation" to determine the periods of the various oscillations. On comparing these with limnographical observations made at Desenzano, a good agreement has been obtained, while the formulæ of Merian and of Du Boys are stated not to have led to the same satisfactory conclusions.

THE ordinary form of liquid bath for the determination of melting points has been modified by the introduction of an air-bubble system, causing a rapid circulation of the liquid, and hence a uniform temperature. The same idea has been very ingeniously applied by Mr. H. Stoltzenberg (*Zeitschrift für physikalische Chemie*, March 11) in designing a low-temperature cooling bath. The liquid (pentane) is caused to circulate by means of hydrogen bubbles through a spiral dipped in liquid air, ether, and solid carbon dioxide, or a mixture of ice and salt, according to the temperature required, and then passes into the vacuum-jacketted vessel in which the measurements are carried out. The temperature can be easily regulated by altering the amount of the spiral immersed, and can be kept very constant.

IN the *Annalen der Physik*, iv., 30 (1909), Dr. M. Laue discusses the question of thermodynamic reversibility as applied to diffraction of light through a grating. The question has assumed a new aspect since the investigation of the properties of coherent pencils has shown that regular reflection and refraction at the surface of two media is not essentially irreversible. The conclusions at which Dr. Laue arrives are fairly simple and straightforward. If an indefinitely extended train of plane light waves falls on an equally indefinitely extended grating no irreversible change takes place. On the other hand, if the grating is limited in extent the measure of the irreversible changes, in terms of entropy, is equivalent to that produced by diffraction through an aperture equal in size to the grating itself. Thus the larger the area of the grating the less entropy change is associated with the diffraction, and every intermediate condition exists between the practically reversible diffraction of a very large pencil of light and the irreversible diffraction of a small one. In the *Physikalische Zeitschrift*, x., pp. 807–10 (1909), Dr. Laue enunciates analogous conclusions. He finds that the scattering of light by small transparent particles is irreversible, and that if diffraction at a grating is accompanied by absorption the change of entropy is the same as if the absorption were associated with an equivalent geometrico-optical process. We have here a simple illustration of the futility of formulating a thermodynamical scheme on the dQ/T definition of entropy. At the same time, the principle of coherence does not render it possible to produce an increase of available energy, but only to rescue what would otherwise be lost, and this is not inconsistent with a broader enunciation of the laws of thermodynamics.

MESSRS. G. PHILIP AND SON, LTD., have issued a planisphere of the earth (price 7*s*. 6*d*. net), devised by Mr. G. F. Morell, by which it is possible to determine, with a single adjustment, the local time corresponding to any given Greenwich time, or *vice versa*. The whole surface of our globe is projected upon a disc about 23 inches in diameter, capable of rotation about a point fixed at the North Pole. Parts of this disc show through a circular window about 13 inches in diameter on the face of the planisphere, and around this window the hour lines are marked, so that the relation between the meridians on the map of the earth and the time can be seen at once. About three years ago the same publishers produced a "Standard Time-dial," in which the north and south hemispheres of the earth were mounted back to back and rotated together on a single pivot (see NATURE, October 31, 1907). The planisphere now issued serves the same purpose, and while it has the advantage of enabling the relation between the times at any parts of the world to be seen at a single glance, it suffers from the disadvantage of great distortion in the case of regions south of the equator. For the consideration of relative times this distortion does not matter, though it would be misleading if used for purposes of geographical instruction, and it enables believers in a flat earth to show that all the phenomena of local time can be explained on their theory. The diagrams of constellations inserted around the circular opening convey a completely wrong impression as to the relation of the stars to the earth; but while the planisphere will be of little value educationally, it provides a very convenient means of determining easily the corresponding standard times at any instant in different parts of the earth.

THE first edition of Prof. J. Percival's "Agricultural Botany" was published by Messrs. Duckworth and Co. ten years ago, and was favourably reviewed in these columns (vol. lxii., p. 570). The work has been accepted as the standard text-book for agricultural students and others concerned with practical aspects of botany, and we are glad to welcome the appearance of the fourth edition. A new chapter has been added on the Linacæ, with particular reference to flax or linseed; and among the additions is an account of Mendelian laws of inheritance, to which much experimental work has been devoted since the original volume appeared in 1900. The book now contains about twenty more pages than the first edition, and the revision and additions will enable it to maintain the high position it holds among text-books for the study, laboratory, and the reference book-shelf.

A COMPREHENSIVE catalogue of important works on mathematics, astronomy, physics, chemistry, and kindred subjects is comprised in the first part, just issued, of the supplement to Messrs. H. Sotheran and Co.'s "Bibliotheca Chemico-Mathematica." The notes to many of the works are both interesting and curious, and they make this catalogue a readable publication instead of merely a list of titles of books.

MESSRS. WATTS AND Co. have issued for the Rationalist Press Association, Ltd., a cheap reprint of Prof. Haeckel's "Last Words on Evolution." The price of the new edition is sixpence in paper covers and one shilling bound in cloth.